

FIG. 1A

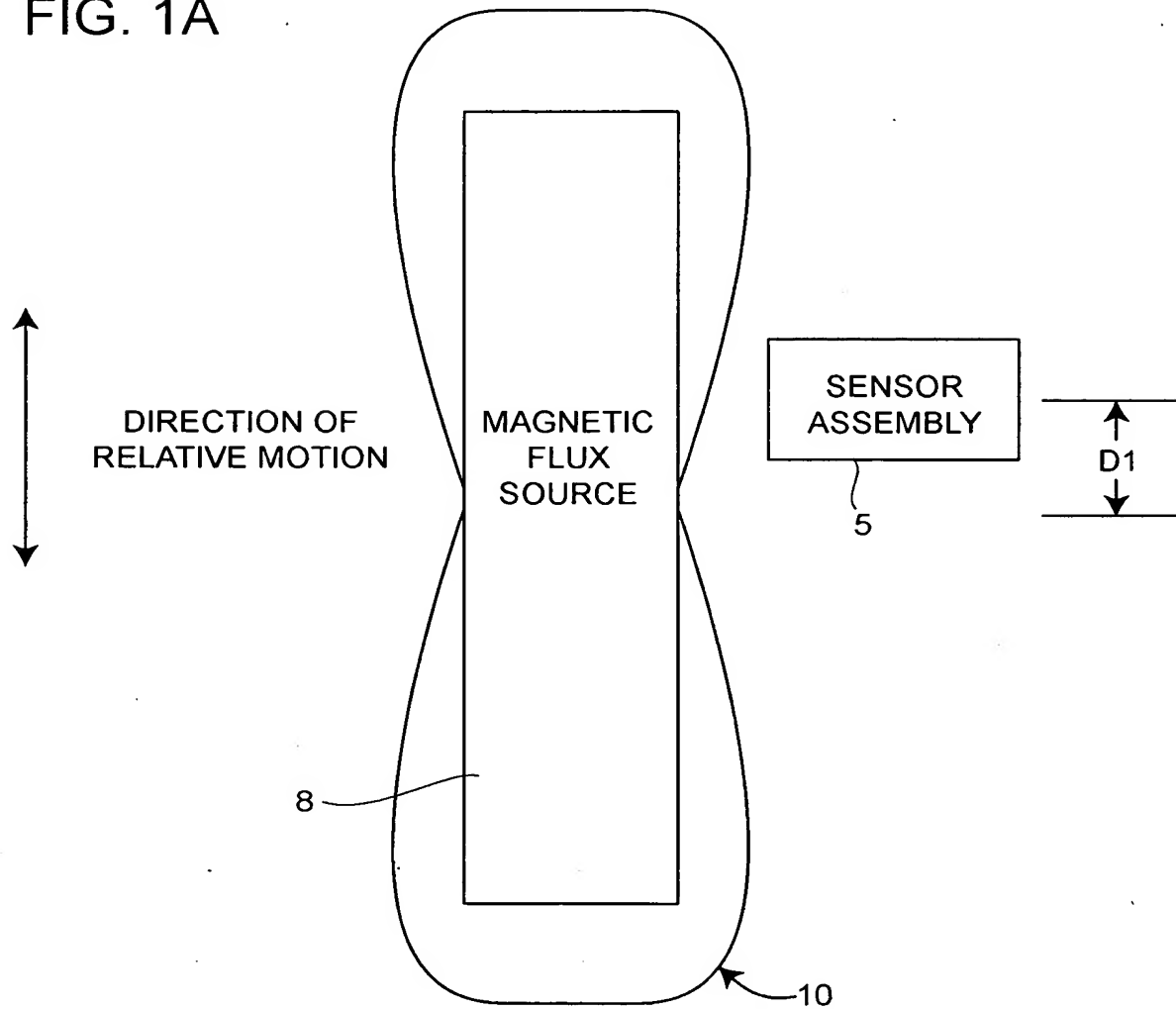


FIG. 1C

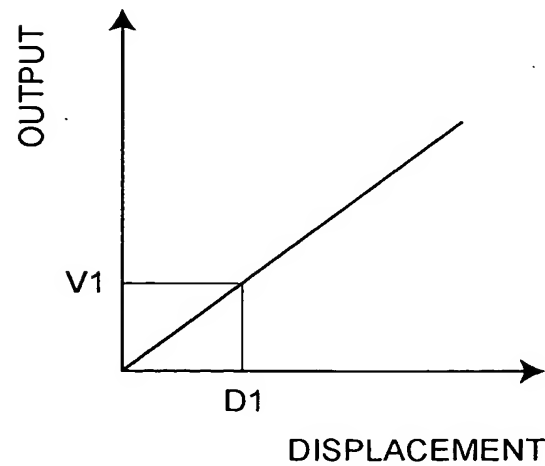


FIG. 1B

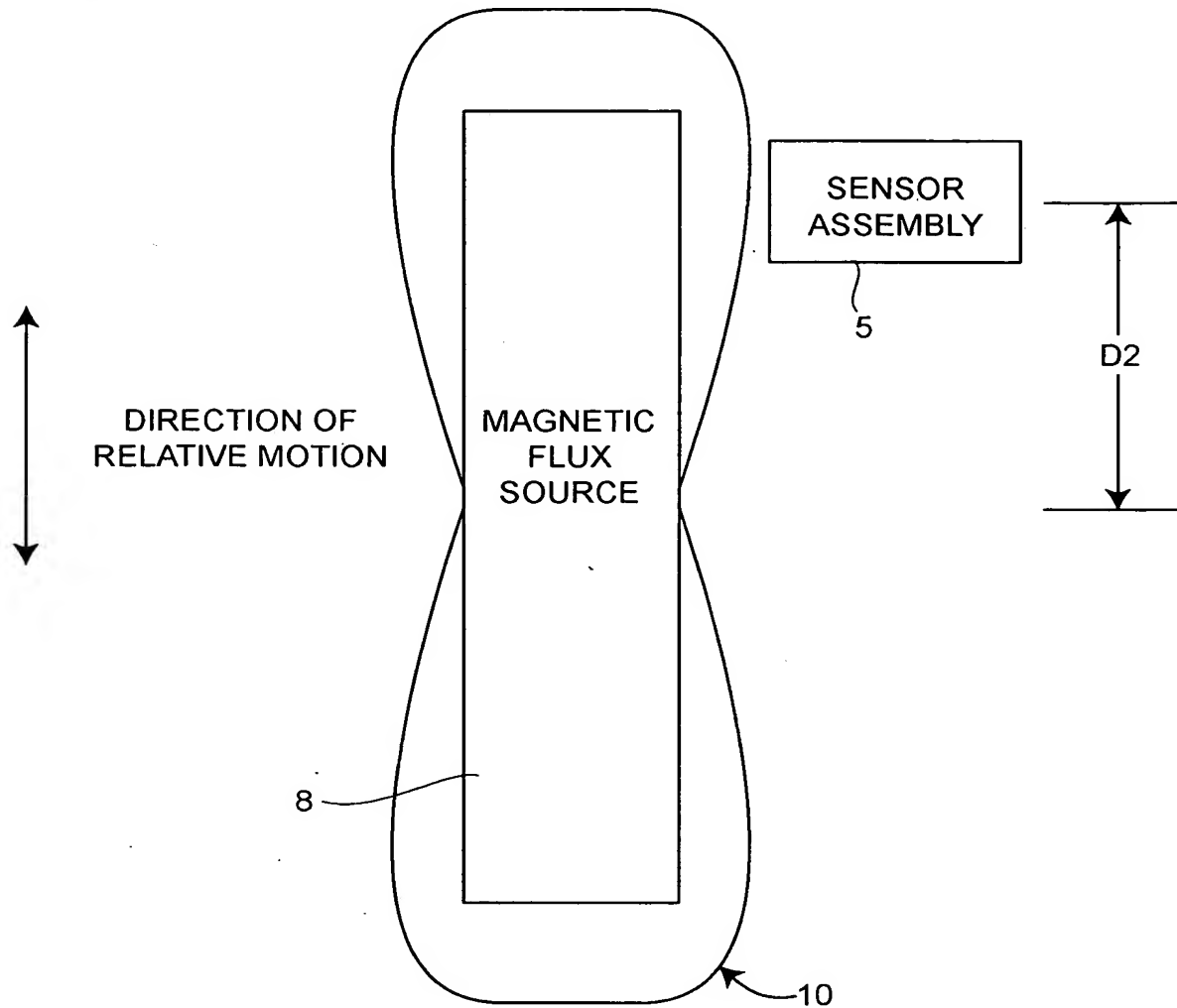
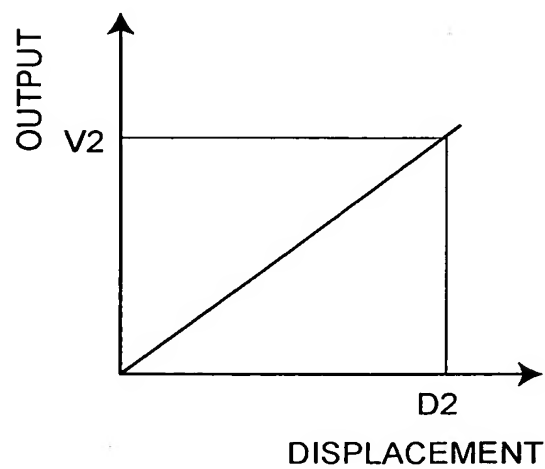


FIG. 1D



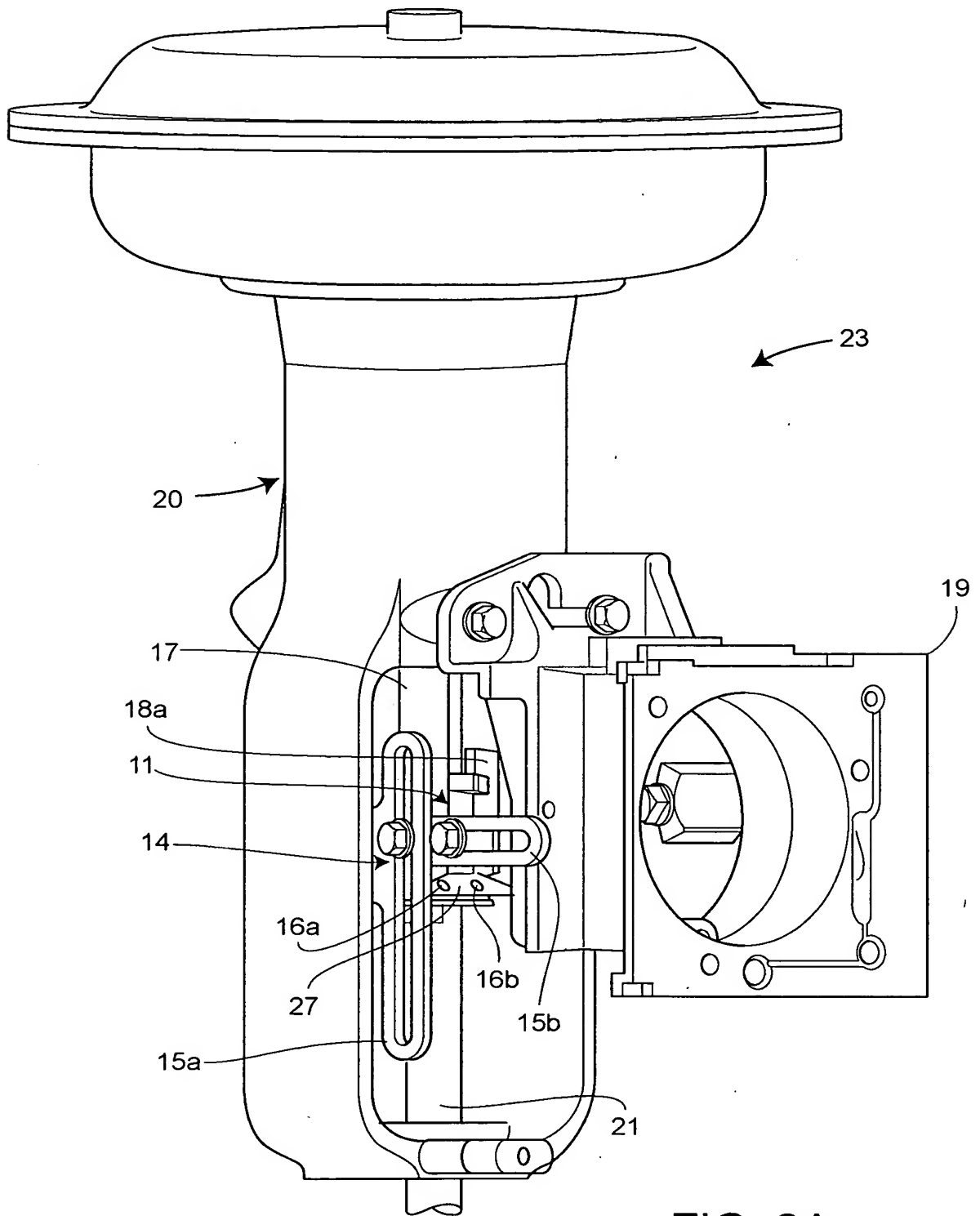


FIG. 2A

FIG. 2B

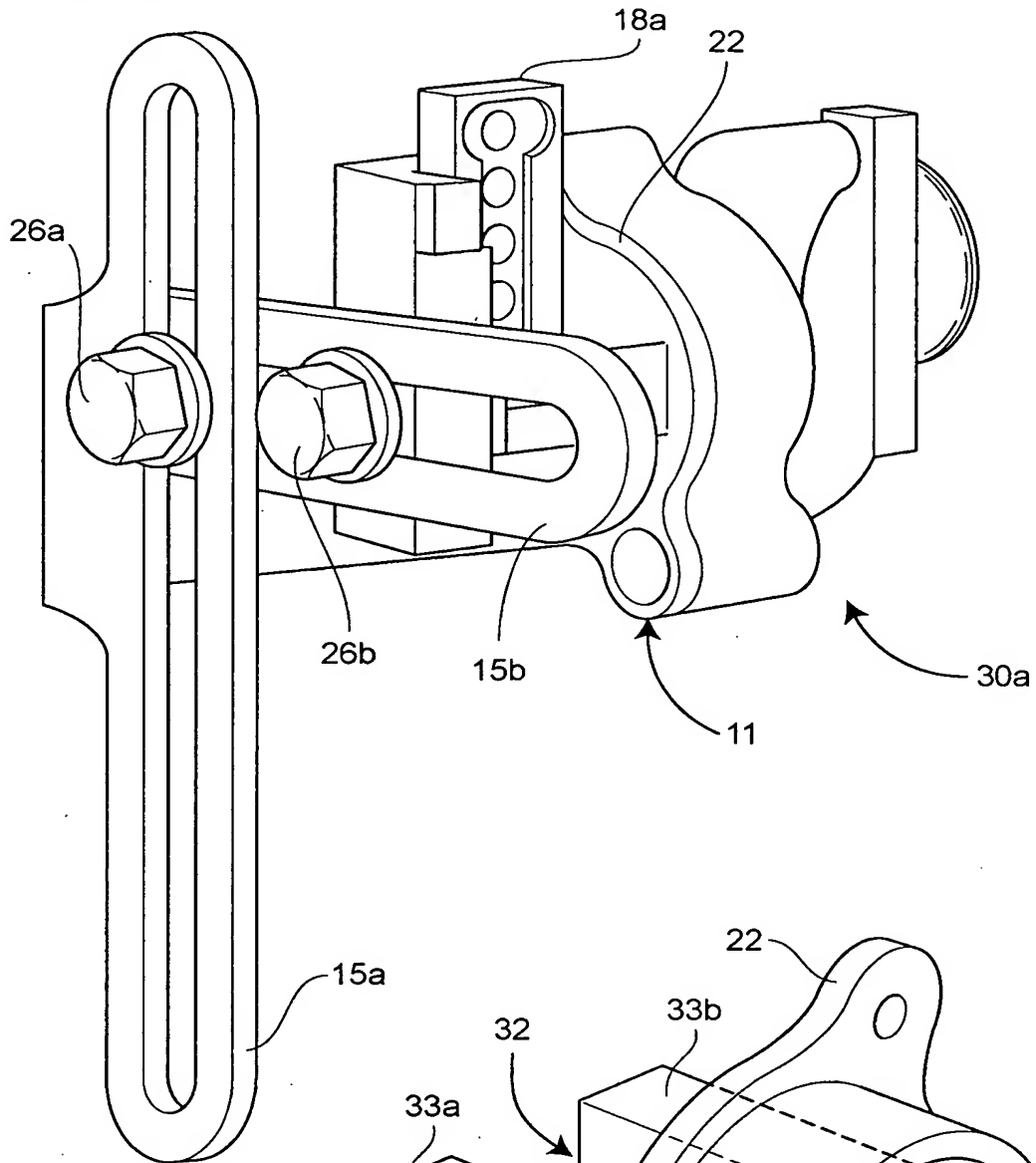
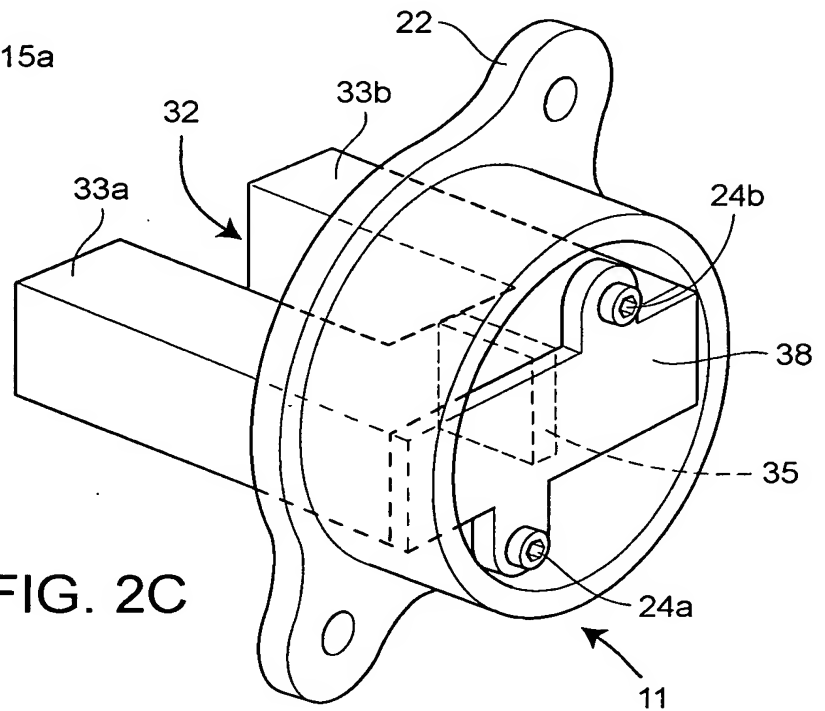


FIG. 2C



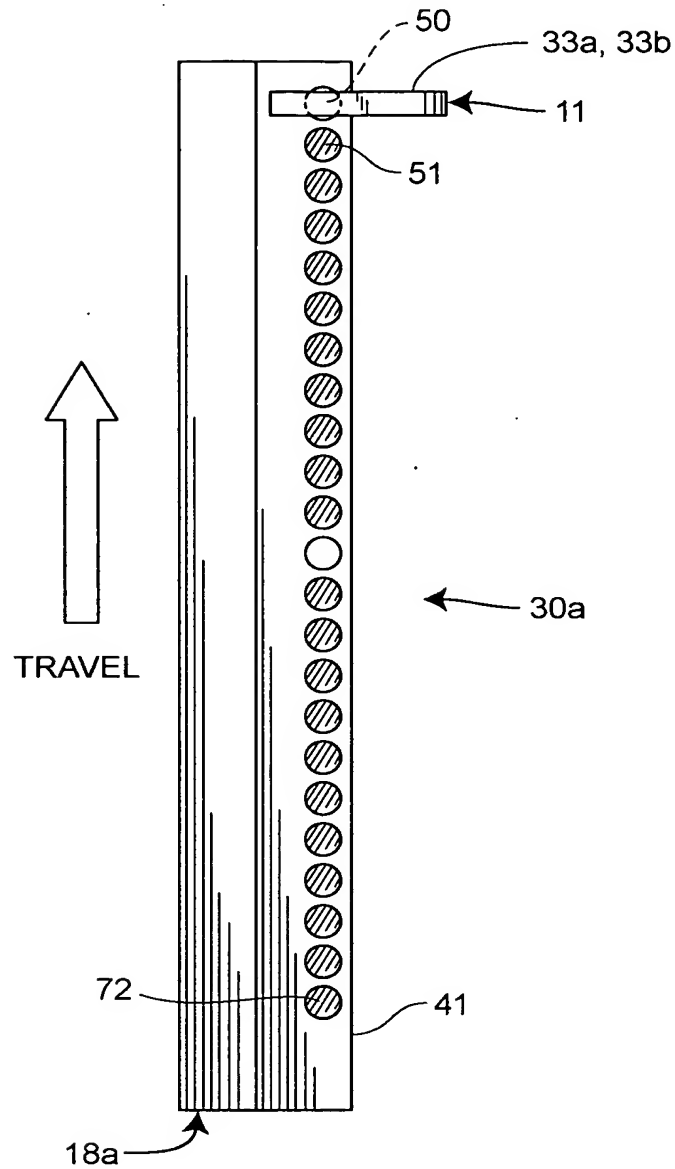


FIG. 3A

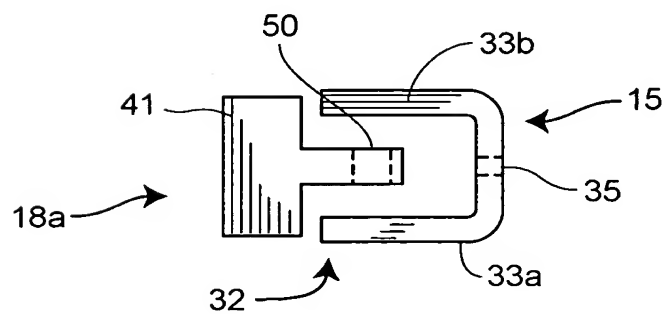
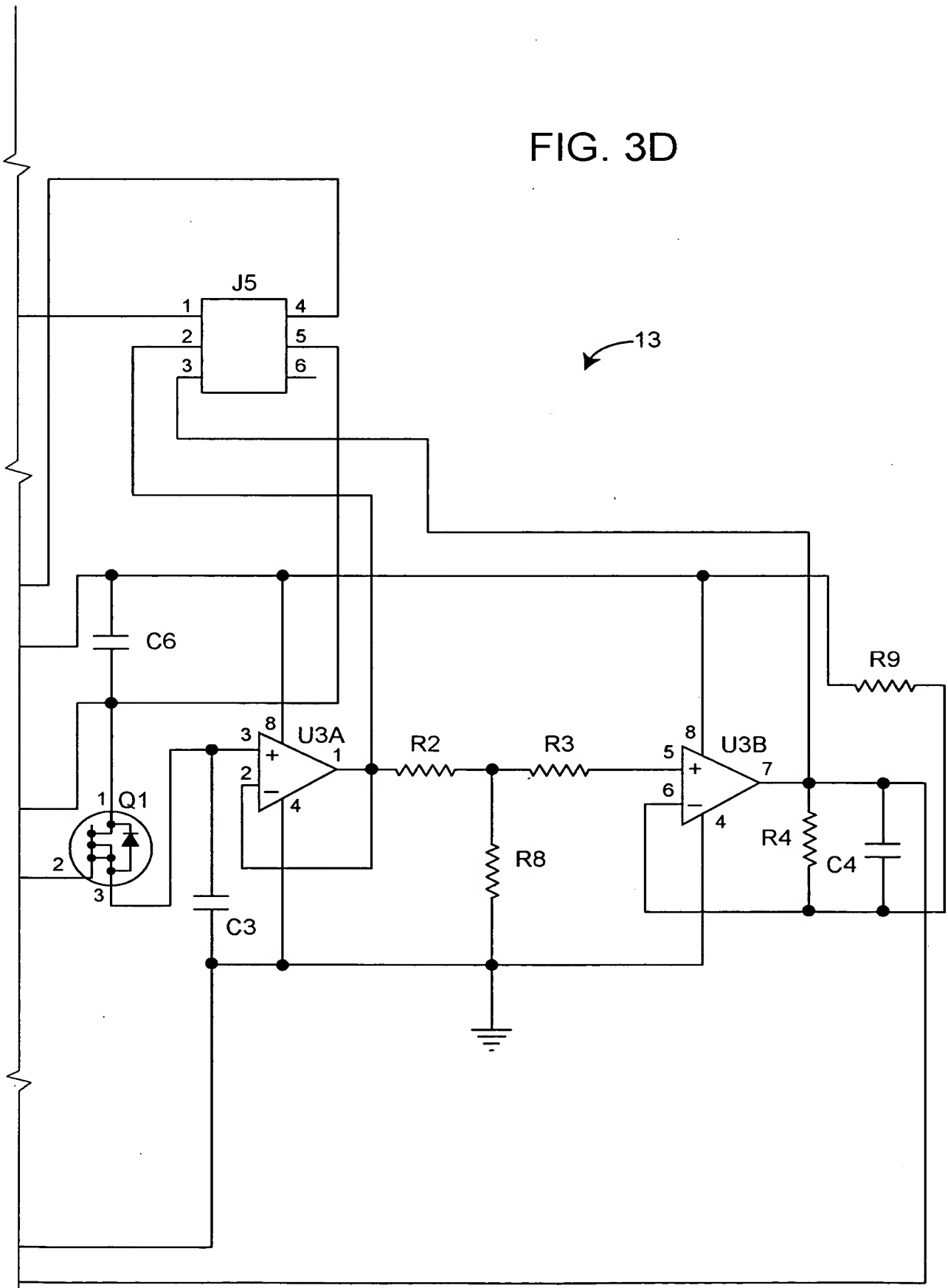


FIG. 3B

FIG. 3C

The schematic diagram, labeled FIG. 3C, illustrates a circuit 13. The circuit includes two 6-pin connectors, J1, a 4-pin connector J3, and a 4-pin connector J4. It features a microcontroller U1 with pins VDD, OSC1, OSC2, MCLR, VSS, GP0, GP1, and GP2. Other components include resistors R1, R5, R6, R7, R10, R11, R12, R13, and R14; capacitors C1, C2, C5, and C7; a crystal Y1; and a transistor Q2. The circuit is powered by a battery and includes a ground connection.

FIG. 3D



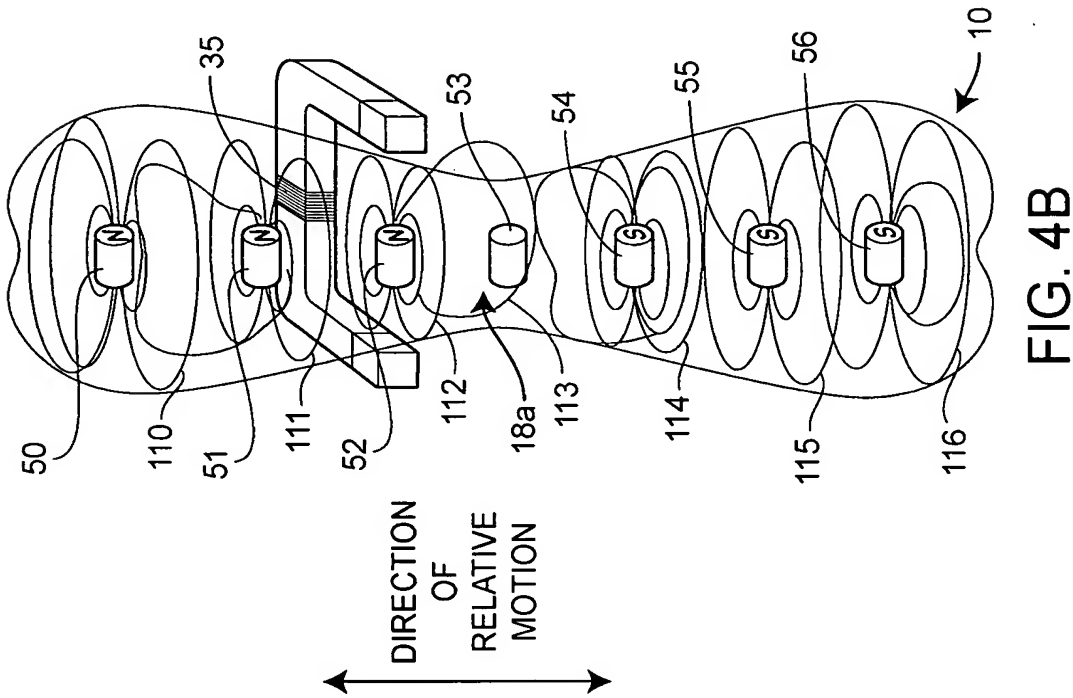
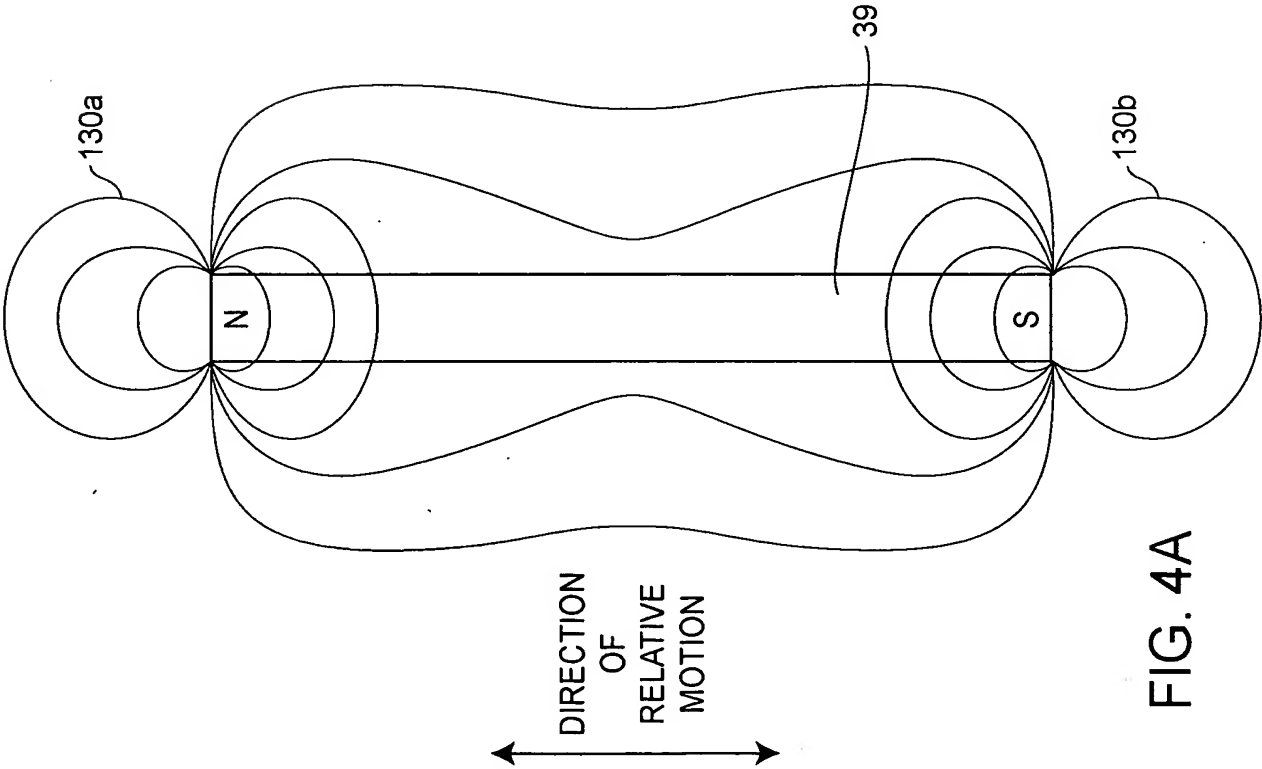


FIG. 5A

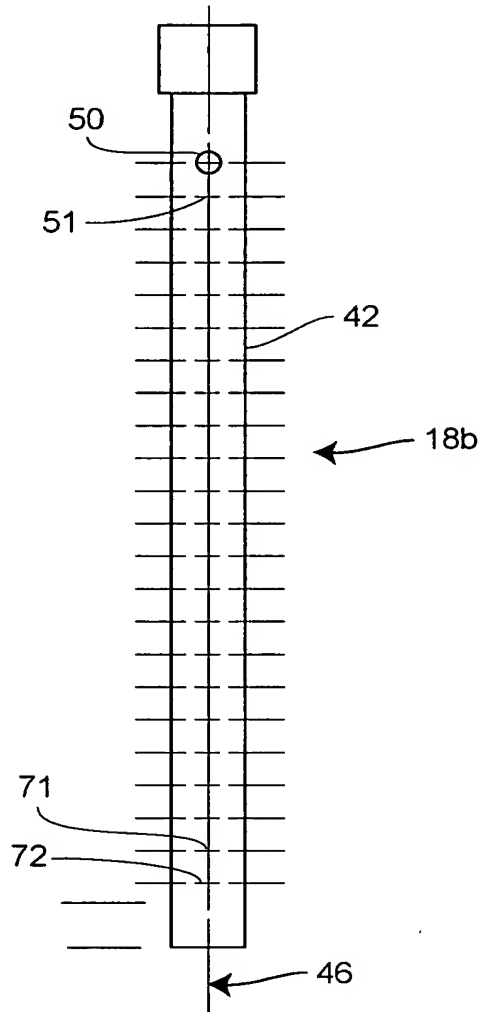
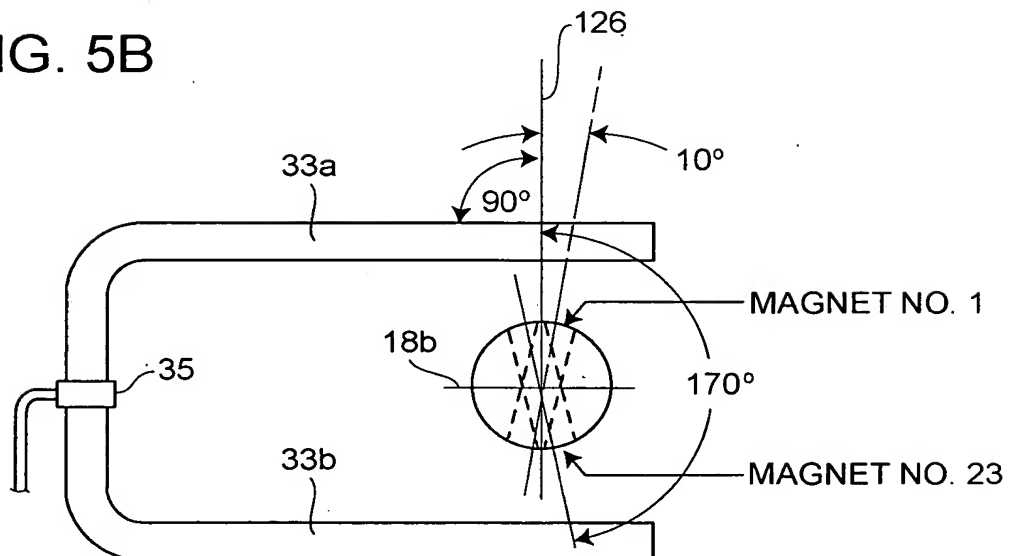


FIG. 5B



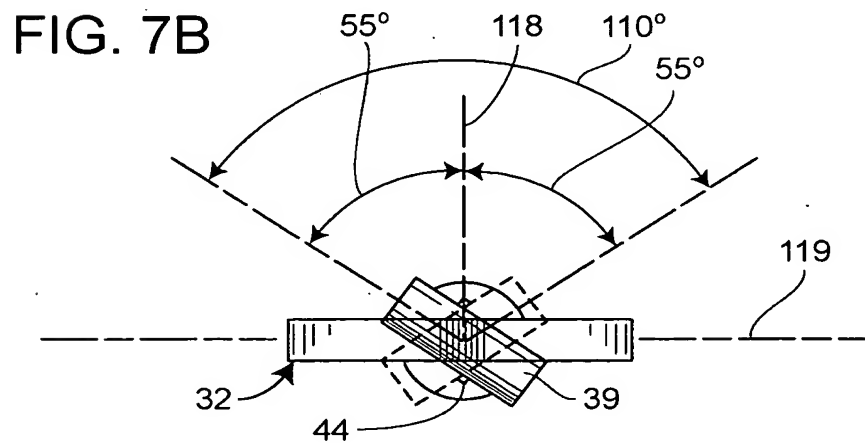
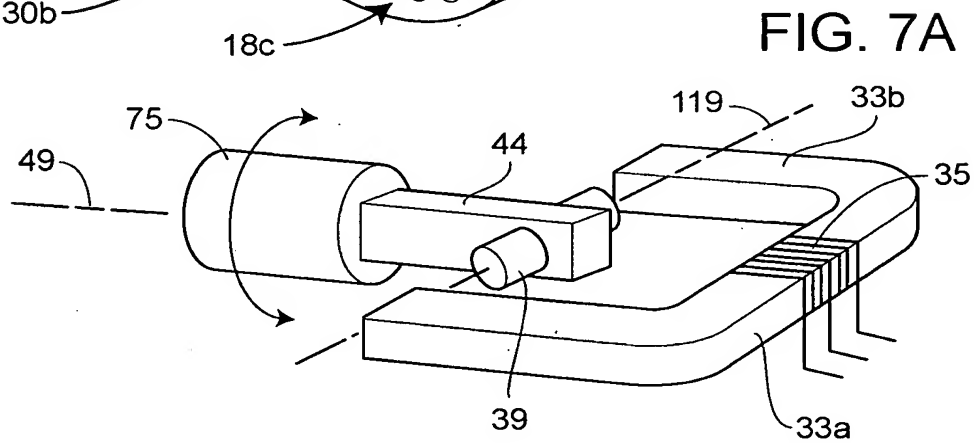
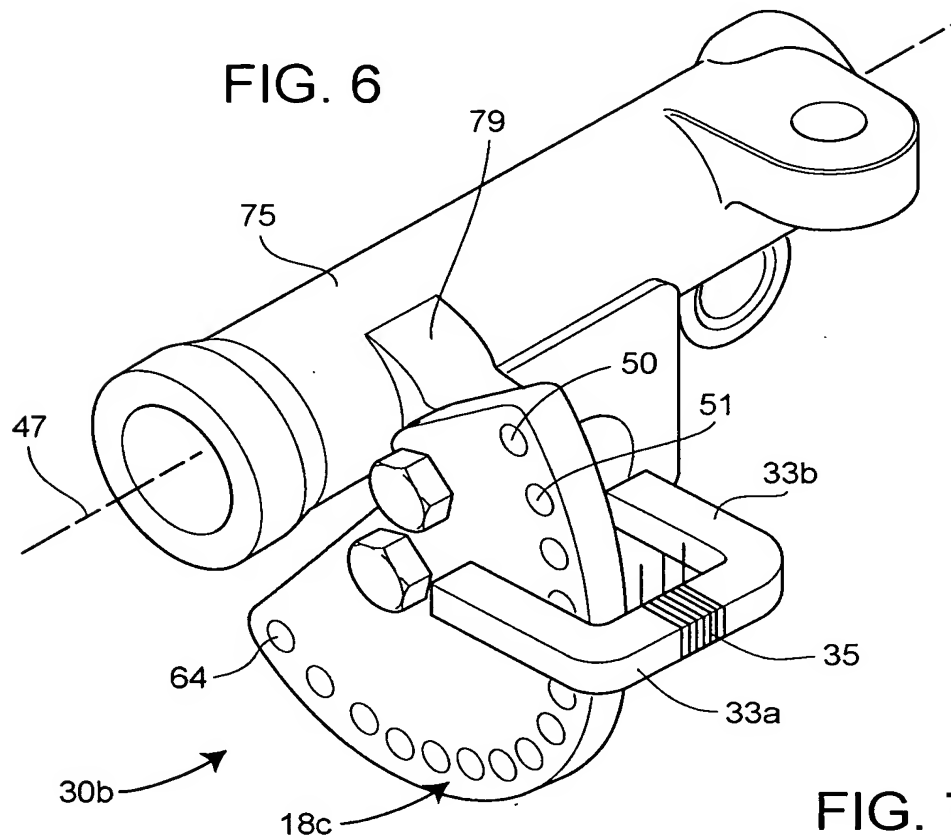


FIG. 8

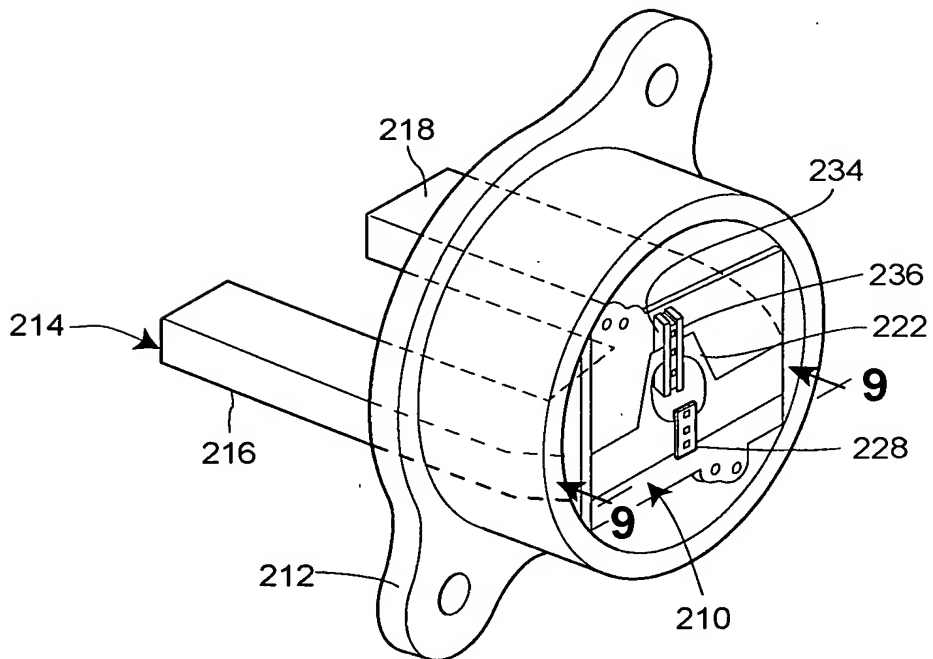


FIG. 9

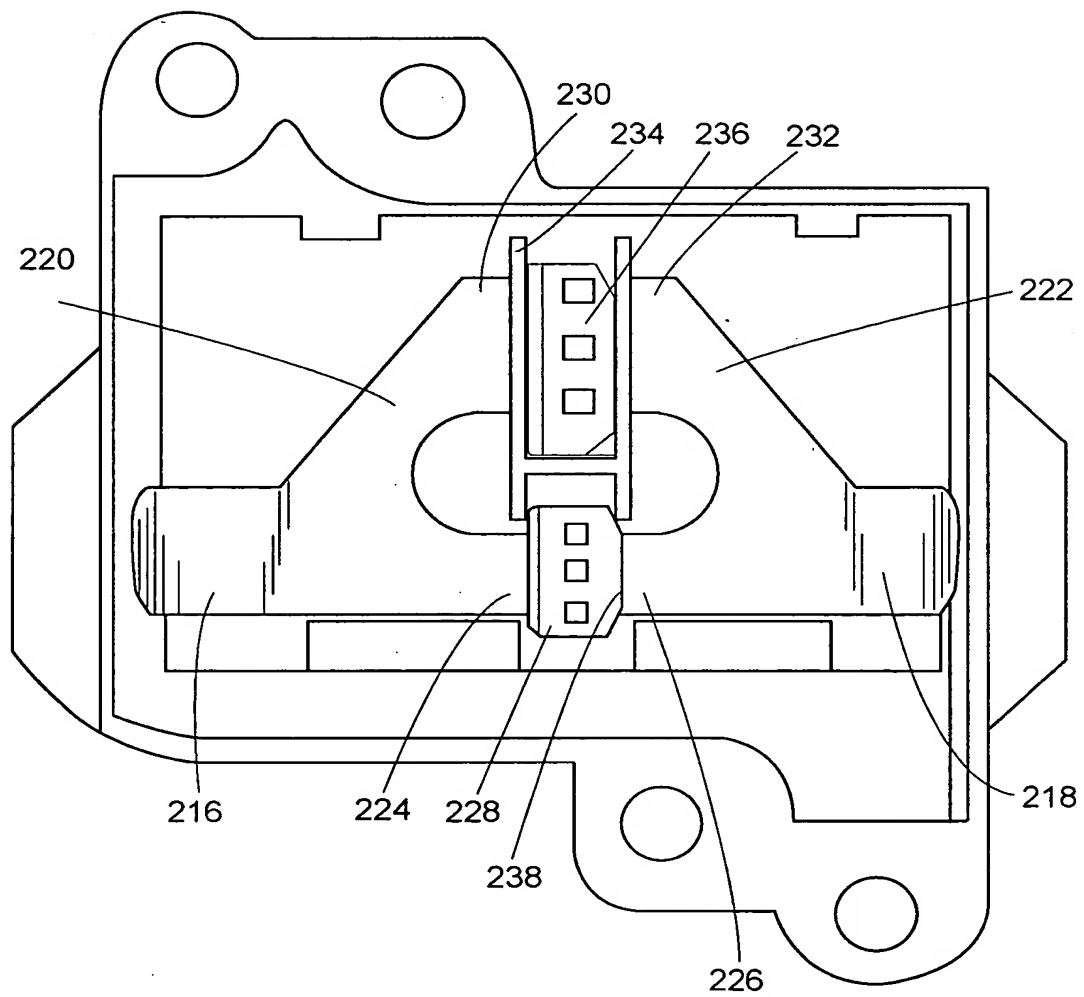


FIG. 10

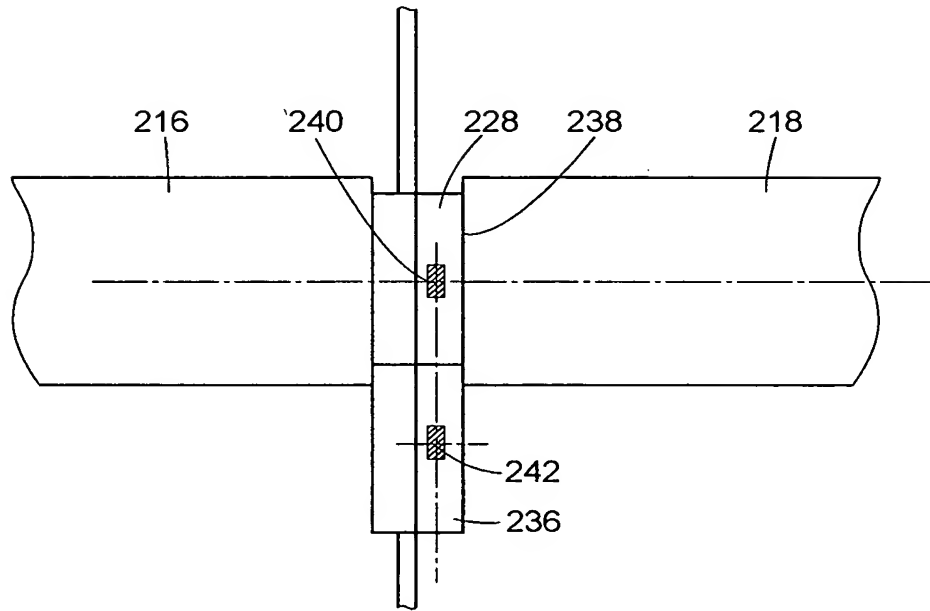


FIG. 11

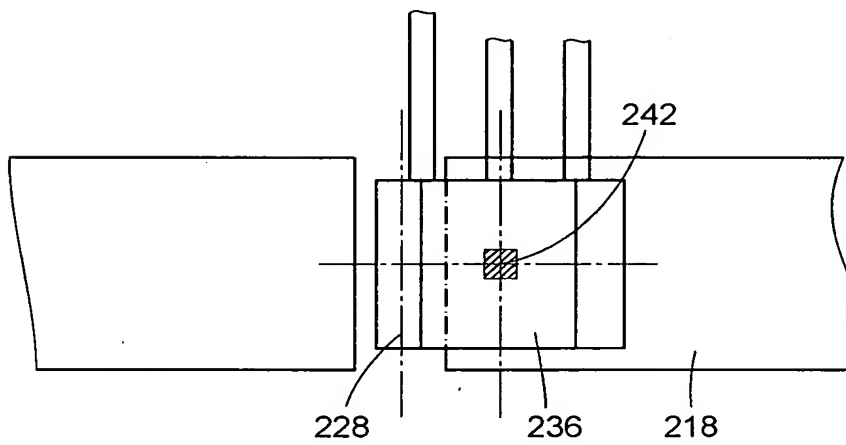


FIG. 12

Magnet Holder Travel vs Output of Primary Hall Sensor (Allegro 3516LUA) and a Second placed end to end with the Primary. Second sense element just outside the air gap between the poles.
Magnet array is 2.5 inch 14 magnet #A14-6 Version 1.3 Calibration

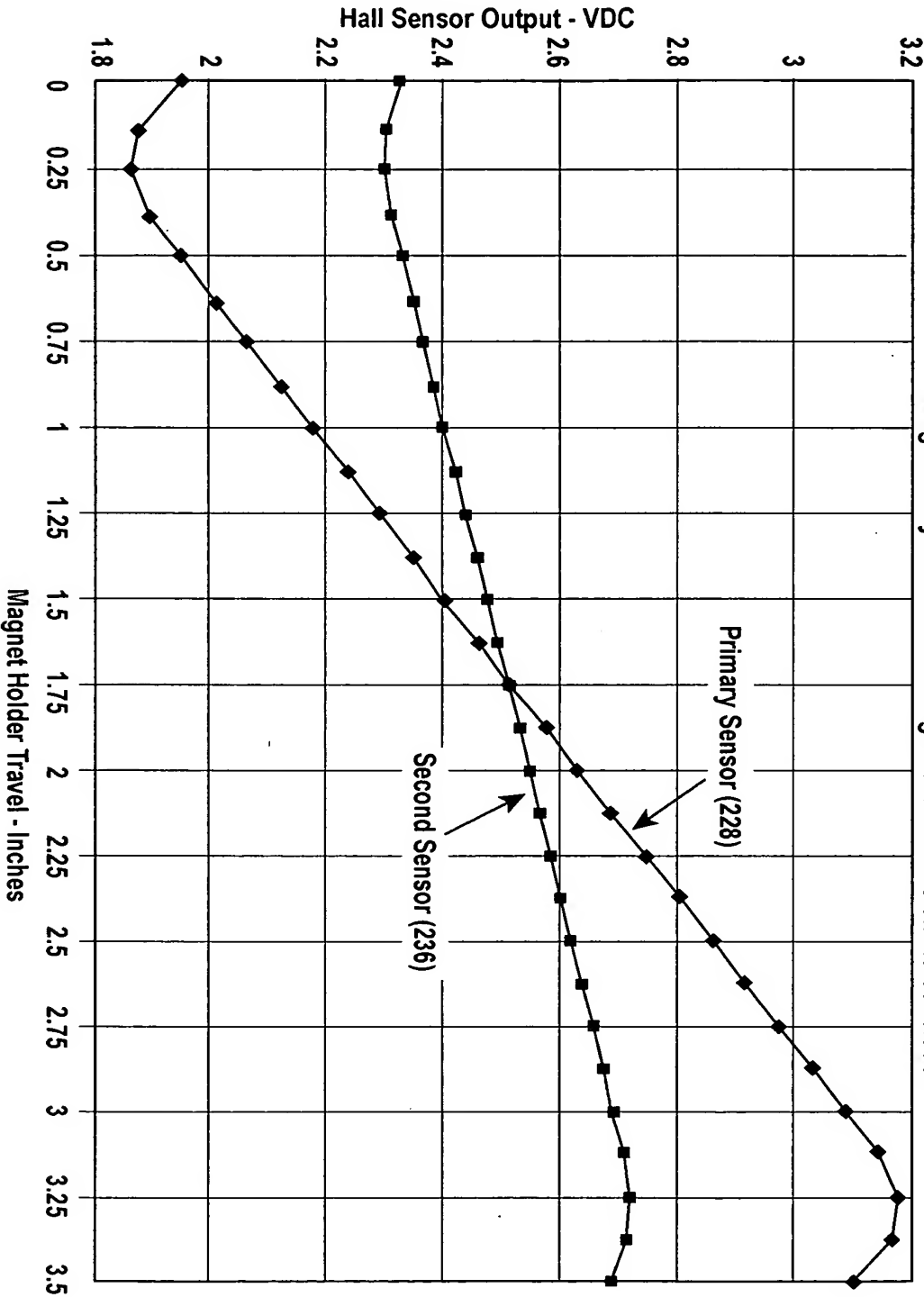


FIG. 13

